

DENVER & INTERURBAN



Published by **INTERURBANS**

Foreword

Denver---financial, political and business capital of the Rocky Mountain region---and Boulder---seat of the University of Colorado---were connected by an interurban electric railway, The Denver & Interurban Railroad, from 1908 until 1926. Here was one of the west's outstanding interurbans---yet because it was built, operated and abandoned before the advent of railfan associations and the tremendous interest in rail transportation which exists today the D&I has not received a fraction of the attention it deserves.

That this is a distinct loss is apparent from even a cursory examination of the D&I. Here was a true interurban! It connected two areas of comparatively dense population; it operated large cars at high speeds; it led the way in the west with the use of AC single phase, 11,000 volt current; it operated by standard steam railroad rules. In more ways than one the D&I was ahead of its time.

The two decades which have passed since the D&I passed into oblivion have obscured certain details of a historical nature; in addition many of the records covering this line have been destroyed. We have been fortunate, however, in enlisting the aid of Mr. W. H. Edmunds, long-time head of D&I, and of Mrs. Andrew W. Whiteford, widow of the famous D&I motorman and photographer. With their cooperation enough of the missing facts have been recovered to present a fairly complete picture of this fine old interurban line.

The D&I was owned by The Colorado & Southern Railway Company (itself a Burlington property) 100%, and originally contemplated construction of an electric line from Denver to Fort Collins, Colorado, including a street railway system in Fort Collins. The street railway system was built first, commencing operation early in 1907, and was operated as a branch of the D&I Railroad Co. until the fall of 1918 when it was sold to the City of Fort Collins which still operates it as a municipal property. The main



line never went further than Boulder, however, on account of changing conditions of travel. As this account is interested in the interurban aspect of the D&I, it will not attempt to cover the detached streetcar system of Fort Collins.

At this point it may be of interest to outline the history of this special issue of INTERURBANS. Special #5 had its inception in a telephone call from relatives of the late Mr. Whiteford. Were we interested in photographs Mr. Whiteford had taken of D&I scenes during the years he was associated with the company? We were, and negotiations which followed brought into INTERURBANS' possession a large amount of material impossible to secure elsewhere. This material has resulted in this publication.

We trust that Special #5 will find its way into the hands of many who rode the Kite Route and whose memories will be jogged by its content. Their reminiscences will be welcome material for the pages of INTERURBANS.

For convenience in reading, this Special has been divided into three sections: Construction, Operation, Abandonment. The bulk of the Whiteford photos appear in Operation.

October, 1947

Ira L. Swett

COVER PHOTO: D&I motor M-151 posed for her picture one afternoon in 1909 at the Westminster station. Typical of the photos taken by Andrew Whiteford, this shows with unsurpassed clarity all details of the handsome car.

Contents

I - CONSTRUCTION	4
Building The Line	5
Electrical Equipment	6
Map, Trolley Sections	7
Shops & Barns	8
Outstanding Interurban Cars	10
Cars	11
General Information---Cars	12
Map, System	13
Map, Denver Route	14
Map, Boulder Route	15
Newspaper Account, Opening	16
II - OPERATION	17
Whiteford Photo Section	18-21
The Globeville Disaster	22
III - ABANDONMENT	23
Last Timetable	24



NOTICE

Copyright, 1947, by Ira L. Swett. All rights reserved. This publication, either in whole or in part, must not be reproduced in any form without permission of publisher.

Whiteford photos copyright, 1947, by Ira L. Swett. Their reproduction in any form is prohibited under penalty of law.



A magnificent action photo by Andrew Whiteford. Special M-155 at right has headed in the hole for its meet with a regular train, M-152. Officials on the ground flag down the fast-stepping interurban to deliver special orders to its crew.



INTERURBANS



The National Electric Railway News Digest

1414 SOUTH WESTMORELAND AVENUE
LOS ANGELES 6, CALIFORNIA

Presents Its Special Number Five,

The

DENVER & INTERURBAN

Railroad



Price, One Dollar

October, 1947



I - CONSTRUCTION

ABOVE: WHITEFORD PHOTO OF EXCURSION
TRAIN AT ELDORADO SPRINGS, 1914.



Building the Line



Converting the Colorado & Southern's Denver-Boulder lines to electric operation was not a simple matter. Inasmuch as the D&I trains were to augment, not replace, steam trains, an additional heavy flow of traffic would descend upon the then single track system; not only did C&S operate both standard and narrow gauge steam trains over the affected trackage, but trains of the Burlington Route entered and left Denver over this line as far as Burns Junction (see map). The double-tracking of the portion of the line from Denver to Louisville Junction was therefore regarded as inescapable.

The double-tracking began at Louisville Junction on the Marshall branch and at a point a short distance north of Louisville Junction on the Louisville branch. These two new tracks for D&I trains joined a short distance south of Louisville Junction and the new electric junction was labeled "D&I Junction."

From D&I Junction southward to a point slightly north of Utah Jct. (a junction for steam trains only) the new track closely paralleled the original track. This double track stretch had trolley wire only over the new track, C&S deeming it advisable to keep its steam and electric trains segregated wherever possible. From Utah Junction the new electric track veered east to the suburb of Globeville, where D&I made track connection with the Denver City Tramway system, its cars continuing to

the downtown Denver terminal at 16th & Arapahoe Sts. over Tramway track using the city system's 550 volt DC current and operated by Tramway men.

Northward from Louisville Junction to Boulder the two routes retained their original track, although considerable work had to be done to the roadbed to smooth it up for high speed electric operation. The branch from Marshall up to Eldorado Springs at the mouth of South Boulder Canyon was electrified also. Local conditions in Boulder made it advisable for D&I trains to operate on city streets using direct current at 550 volts. New track was therefore constructed in Boulder on Pearl St. and on 12th St., with a siding for D&I cars constructed into the C&S Depot grounds.

Track construction standards were high, being those required by the C&S and Burlington railroads. Rail of 70 and 80 pounds was used, electrically connected by No. 0000 bonds. Slag blasted from the waste pile of the Globeville smelter was used to ballast the entire line. Maximum grades encountered on the two main lines were held to 1.25%, while the Eldorado branch had practically continuous grades ranging up to 2% with compensated curves.

Electric trains were operated to Boulder via either route and returned via the other, making a continuous loop; total mileage per round trip was 57.24 miles.

Official mileage figures given in an official C&S report were:

<u>From</u>	<u>To</u>	<u>Mileage</u>
16th & Arapahoe, Denver	Globeville	4.26
Globeville	D&I Junction	15.23
D&I Junction-Marshall	Boulder	13.24
D&I Junction-Louisville	Boulder	13.04
Marshall	Eldorado Springs	3.30
East Boulder	West Boulder	1.78
TOTAL D&I MILEAGE.....		50.85



Electrical Equipment



C&S decided to cast the D&I's lot with Westinghouse and its single-phase, high voltage alternating current system. It will be remembered that this decision was made at a time when leading electrical engineers the nation over were at bitter odds over the comparative merits of AC and DC operation of electric railways. General Electric sponsored DC, while Westinghouse just as warmly espoused the cause of AC. Here a word or two on the advantages and disadvantages of the two might be welcome:

The principal merit of the single-phase system lies in its ability to operate at high voltage with a single overhead conductor; therefore power can be transmitted over long distances with a minimum of copper. Its main disadvantage lies in its higher first cost. Also, the weight of AC equipment carried on the cars amounts to about $2\frac{1}{2}$ times the weight of comparable DC equipment. The single-phase equipment on a car might amount to as much as 70% of the weight of the car and trucks light---whereas DC equipment to do the same work would come to about 20% of the weight. Thus ran the arguments back in 1907. After hearing them out, C&S decided that the D&I would be an AC road using Westinghouse equipment.

Westinghouse, Church, Kerr & Co. obtained the contract to install the required overhead, feeders, etc., and were also the successful bidders on the big new power plant at Lafayette, near Louisville, where steam generators brought into being the 11,000 crackling volts to be fed to the big green cars. From the Lafayette plant two feeders ran to D&I Junction where they fed into the interurban's overhead system. An interesting switching system set-up was contrived at D&I Junction (see diagram) whereby

power from either or both of the feeders could be made to supply current to one or all of the three trolley legs: Denver Section, Louisville Section, or Marshall Section. The 11,000 volt 25-cycle AC current was fed to cars through a catenary supported No. 0000 trolley wire 22 feet above the rails and supported by a $7/16$ " steel cable to which it was clipped at ten foot intervals. Care had to be taken in placing the trolley wire on curves, for a one-inch track elevation resulted in a $4\frac{1}{2}$ inch deviation of the pantagraph. No additional feeders were required along the route due to the use of the AC system. The messenger cable was carried on porcelain insulators supported by angle-iron brackets. Poles were spaced 120 feet apart on tangents and sufficiently close on curves so that pull-offs were not necessary. A ground wire ($7/16$ " stranded galvanized steel cable) was strung over the pole tops for the entire length of the line; this afforded a cheap and convenient way to ground the brackets, gave excellent lightning protection, and served as a continuous return circuit to augment the bonded and cross-bonded track rails. The overhead wire was connected to the track at every fifth pole and the track was provided with ground plates.

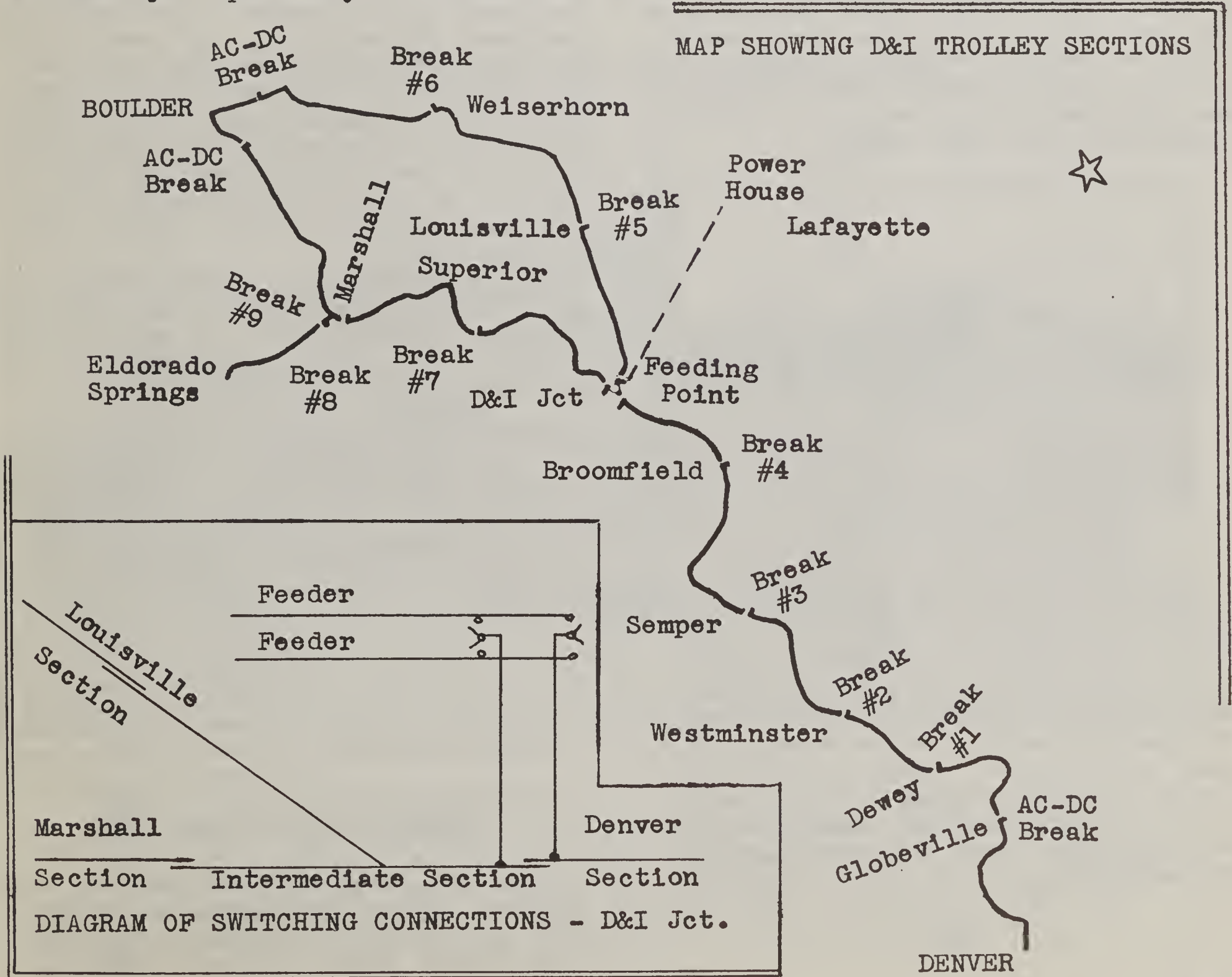
Three steam construction trains were used by the contractors in electrifying the C&S. The first train installed poles, and so efficient did it become that in one day 26 men installed 117 poles, including digging holes and tamping. The second train erected the brackets; five freight cars fitted with scaffolds on their roofs worked simultaneously on four or five poles, 18 men being able to erect 150 brackets daily. The third

train strung the wire, a derrick car paying out wire over elevated rollers. This train's best day saw some seven miles of copper put up.

To cut down possible sources of service interruptions, the overhead trolley wire was sectionalized at average intervals of three miles. These section-breaks were located at passenger stations where someone was always on duty: Dewey, Westminster, Semper, Broomfield, D&I Junction, Superior, Marshall (here also was a section-break for the Eldorado line), Boulder, Weiserhorn, and Louisville. Trolley wires overlapped at these breaks so there was continuous power supply.

Special AC-DC current breaks were installed at Globeville and at both sides of Boulder where the 11,000 volt AC trolley joined the 550 volt DC trolley. Specially constructed

trolley pole derailleurs were installed at the ends of the DC wire, so designed and placed that should the conductor forget to pull down the pole as his car passed from the DC section the pole would be thrown from the wire and pulled down by the retriever before it could come into contact with the AC wire. The use of DC within Boulder required the construction of a substation there; it consisted of a brick structure on 12th St. near the western edge of the city. The Boulder sub contained a 300-kw GE synchronous motor which in turn fed to the Boulder trolley wire at 550 volts DC. Construction of the Boulder sub lagged behind the remainder of the electrification, so that steam engines hauled D&I cars through Boulder for a short time.





Shops & Barns



The D&I had two sets of shops and barns in its lifetime. The original buildings were located at 23rd and Market (Walnut) Streets; these continued to serve until the D&I was electrified into the Union Station in 1923, at which time a new modern carhouse was erected at 3625 Fox St.

The original shops and barn was a one-and-two story brick building; it had six tracks, each having room for two cars. Five tracks had repair pits, while the sixth was over the coal chute whereby coal was discharged from hopper cars via the chute to the coal bin in the boiler room. D&I normally stored its motor cars inside the barn and allowed the trailers to stand on outside tracks adjoining the building on the north side. The barn was equipped with a separate rolling steel door for each track.



VIEW OF D&I'S ORIGINAL SHOPS

Along the south wall of the building was located a row of blocked-off rooms and offices. Starting at the rear and going to the front, these were: the forge and blacksmith shop, the machine shop, the winding room, the boiler room, a store room, and a pair of offices. Suitable machinery (such as a 24" engine lathe, a vertical drilling machine, emery wheel stands, etc.) made the shop capable of performing fairly heavy repairs.



In case of emergency which removed the Interurban Loop downtown from use temporarily, a wye was located at the barn by means of which cars could be turned and sent back to Boulder.

The shop crew kept a careful check on the interurban cars. The electrical engineer was responsible for the recording of defects and repairs made. A complete card index system was inaugurated to give a complete and convenient reference record as to the condition of each car. The Car Movement Card, for instance, was filled out by the hostler and showed the trains to which each car was assigned and operated. The Condition Card was filled in by the crew of the car and was turned in with the car. The Inspection Card was made out by the carhouse inspectors; no car could leave for a run until its inspection card had been duly signed by the inspector on duty. Other cards related to wheel condition, MU control, body defects, etc.

While Denver was the headquarters, provision was made at Boulder for performing light repairs; a spur track adjacent to the C&S Depot was set up for such work.

EE 24-1528		THE DENVER & INTERURBAN R. R. CO.	
INSPECTION CARD.	Car No.	Date	
Car in from Train No.	at	A. M. P. M.	Time of Inspection A. M. P. M.
This car must not be sent out until the following repairs have been made, or car is released by me.			
Details of Trouble:			
NOTE: Person repairing car must report on back of this card what repairs were made.		Signed..... Inspector	
		Released at..... A. M. P. M.....19...	
		Released by.....	

VIEW OF INSPECTION CARD

The last big job performed by the original shops was making all motor cars double-end to permit operation into Denver Union Station (1922-23).

In 1923 when D&I cars began using the Union Station as their Denver terminal, the original shops were abandoned (due to their location); the railway later sold them to a paper company which used the building as a warehouse. Some time later the structure was completely gutted by fire.

The new shops, built in 1922 and 1923, were located at 3625 Fox St., on the opposite side of the river. The main shop was 50' x 180', brick and steel construction, complete with power car lifts, power crane and track turn tables. An addition to the main shop carried all the necessary tools for car maintenance with lathes, overhead cranes and everything necessary in a modern shop of this type. The storehouse was also made a part of this section.

The new car house was rather unusual in one respect, that being the trolley line inside the building. Inasmuch as the original shop building and car barn was on the line of the tramway company, it was arranged for 600 volt direct current throughout the overhead system inside the barn. Not so with the new barn, however. The new barn was on trackage which used 11,000 volt 25 cycle AC, and it was decided to put this high voltage into the barn. A specially designed door and control system was worked out which operated very safely and satisfactorily.

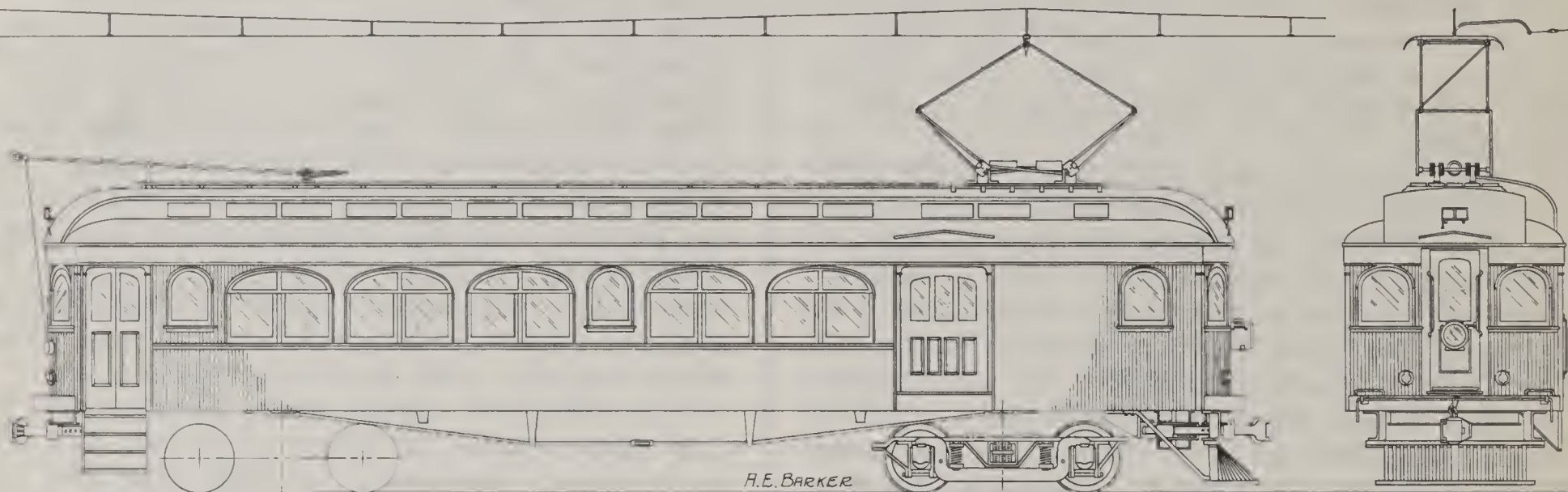
No unusual jobs were performed by the new shops in their rather brief period of service. After the D&I was abandoned, the new shops were sold and are now occupied as a manufacturing and office location for the Safeway Shovel Company.



ONE OF THE FEW PHOTOS OF A D&I CAR OPERATING ON DIRECT CURRENT. THE UNKNOWN PHOTOGRAPHER STOOD IN THE DOORWAY OF THE D&I'S OLD BARN IN DENVER ONE MORNING IN 1919 AND SNAPPED THE M-157 OUTWARD BOUND TO BOULDER. OBSERVE THE GENTLEMAN IN THE HIGH SILK TOPPER RIDING IN STATE IN THE BAGGAGE COMPARTMENT, HIS DIGNITY NOT AT ALL DISTURBED BY THE YOUTH SCRAMBLING IN THE MOTORMAN'S DOOR.

OUTSTANDING INTERURBAN CARS

By A. E. Barker



DENVER & INTERURBAN

56' BAGGAGE-PASSENGER MOTOR CAR

BUILT-ST. LOUIS CAR CO. 1908.

A.E. BARKER 8-14-47

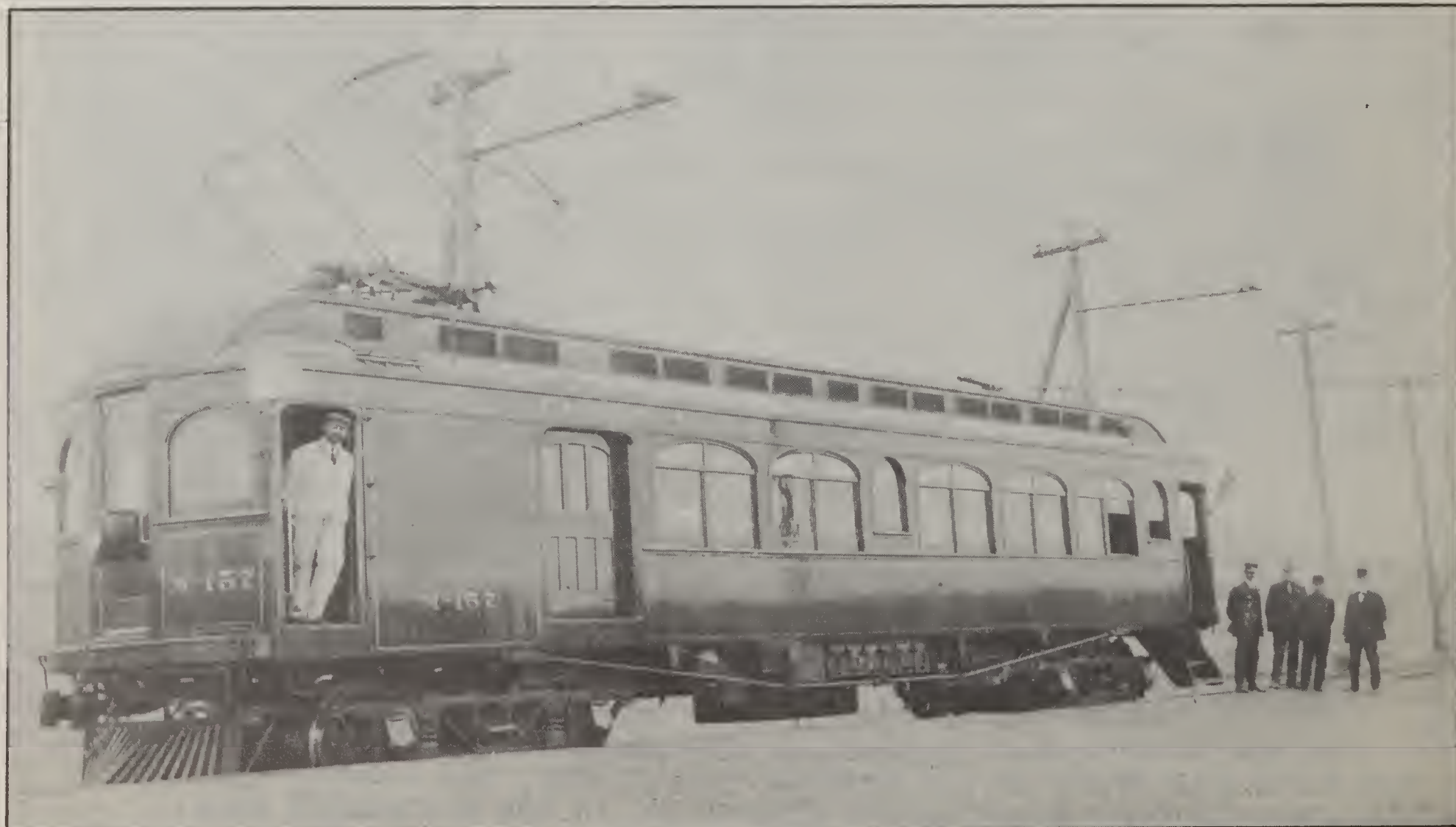
11 - DENVER & INTERURBAN

The above drawing relates to two D&I cars, passenger-baggage combos M-157 and M-158; cars M-151-M-156 were similar in dimensions but had no baggage compartment, this space being given over to more passenger space.

Inasmuch as complete data as to physical dimensions appears on the opposite page, no attempt is made in the drawing to include such data.

So---hats off to the D&I cars....really outstanding!

WHO COULD ASK FOR A FINER INTERURBAN PHOTO THAN THE ONE BELOW! HERE WE SEE M-157 WHEN IT WAS BRAND NEW MAKING AN INSPECTION TRIP FOR THE BENEFIT OF THE OFFICIALS GROUPED AT THE REAR: CONDUCTOR GRENAMYRE, LINE FOREMAN HARDCASTLE, SHOP FOREMAN WILLIAMS, ELECTRICAL ENGINEER DARLINGTON, WITH MOTORMAN FRED SPENCER. ANDREW WHITEFORD TOOK THIS PHOTO IN 1908 AT D&I JUNCTION.



Cars

NUMBERING SCHEME: PASSENGER MOTORS: M-151, M-152, M-153, M-154, M-155, M-156
COMBINATION PASSENGER-BAGGAGE MOTORS: M-157, M-158
PASSENGER TRAILERS: 201, 202, 203, 204

C&S ordered twelve cars from St. Louis Car Company for the D&I. Of the twelve, eight were motors and four were trailers. In addition, C&S turned over to its interurban subsidiary two old wooden open-end passenger coaches with ends built out to accomodate radial couplers. These fourteen cars proved ample to handle the D&I's passenger traffic, even on special occasions.

Mention has already been made of the unusual size of the D&I cars. Their bulk manifested itself not so much in length as in height and weight. It is difficult to conceive of a wooden car 55'6" in length with a weight of 125,000 pounds, but the D&I motor cars achieved just that. The reason for this remarkable weight was, of course, due to the use of high-voltage AC current. The danger of fire was always present so D&I sought to minimize it by giving its cars floors of steel plates and roofs of sheet metal. The AC equipment carried on the cars was much heavier than comparable DC equipment would have been, and a partial duplication of the control system (necessary for DC operation) added some weight. Inasmuch as D&I cars were to operate on the same track as steam trains, C&S caused them to be built stronger than they would have been had they their own track at all times to run upon. A very heavy steel underframe was incorporated, plus an extra-heavy wooden body, lined with mohogany. The height of the cars was increased above normal by the use of 38" wheels, oversize trucks, and a body generously designed to afford ample headroom.

The four trailers were of the straight coach type, but the motors

were of two types: combine and coach. The combines had a motor-man's cab (no door on right side), a baggage compartment lined with mohogany and having drop seats for eight passengers, a smoking compartment with sixteen seats, and a passenger compartment seating 28. The motor coaches omitted the baggage compartment and used the space for more seats. Trail coaches had but one long passenger compartment. Seats in all cars were identical, being of the green Pantasote type with mohogany arm rests; end seats in each compartment were stationary, others could be reversed. A lavatory was provided at the rear of each car. Step wells on platforms were covered by trapdoors while cars were in use. Aisles were covered by heavy rubber floor mats, while a single row of electric dome lights provided illumination.

The D&I cars were the first in the west to have electrical equipment capable of operating on both 11,000 volts AC and 550 volts DC. Each motor car had four Westinghouse 148-A motors rated at 125 horsepower each. Cars were capable of train operation, MU control being standard. An air-operated Westinghouse pantagraph collected the AC current, while a wheel trolley pole was used on DC trackage. Control equipment was of the Westinghouse electro-pneumatic unit-switch type; on each car were 28 valves and 22 cylinders to operate its control system.

The following account is taken from a trade magazine of 1908 and no doubt will be of interest to the more technically minded of our readers:

"The 11,000 volt current is taken from the pantagraph trolley to an oil-insulated double-break electrically operated line switch and thence to the

primary of an auto-transformer carried under the car and thence to ground. From the secondary of the auto-transformer eight taps are taken to supply running current at graded voltages. This current, before being fed to the motors, is passed through preventive coils and through the group of unit switches. Separate switch groups are provided for the AC and DC motor control. The train-line cable carries twelve wires."

Air brake equipment consisted of the Westinghouse AMM brake which had automatic features for train operation. Moving parts of this system, like those of the unit-switch system, were

lubricated automatically.

Couplers were of the Washburn MCB type. Some cars had the MU train line coupler head mounted on top of the coupler knuckle; others placed it high on the dash where it escaped much of the dirt and was easier to couple. The conductor's signal was a push-button located in the jamb of the rear door. Headlights originally were carried on the roof but soon were lowered to a position rather high on the train door where they gave the D&I cars a particularly impressive appearance. Warning signals consisted of an air whistle and an air-operated gong.

General Information

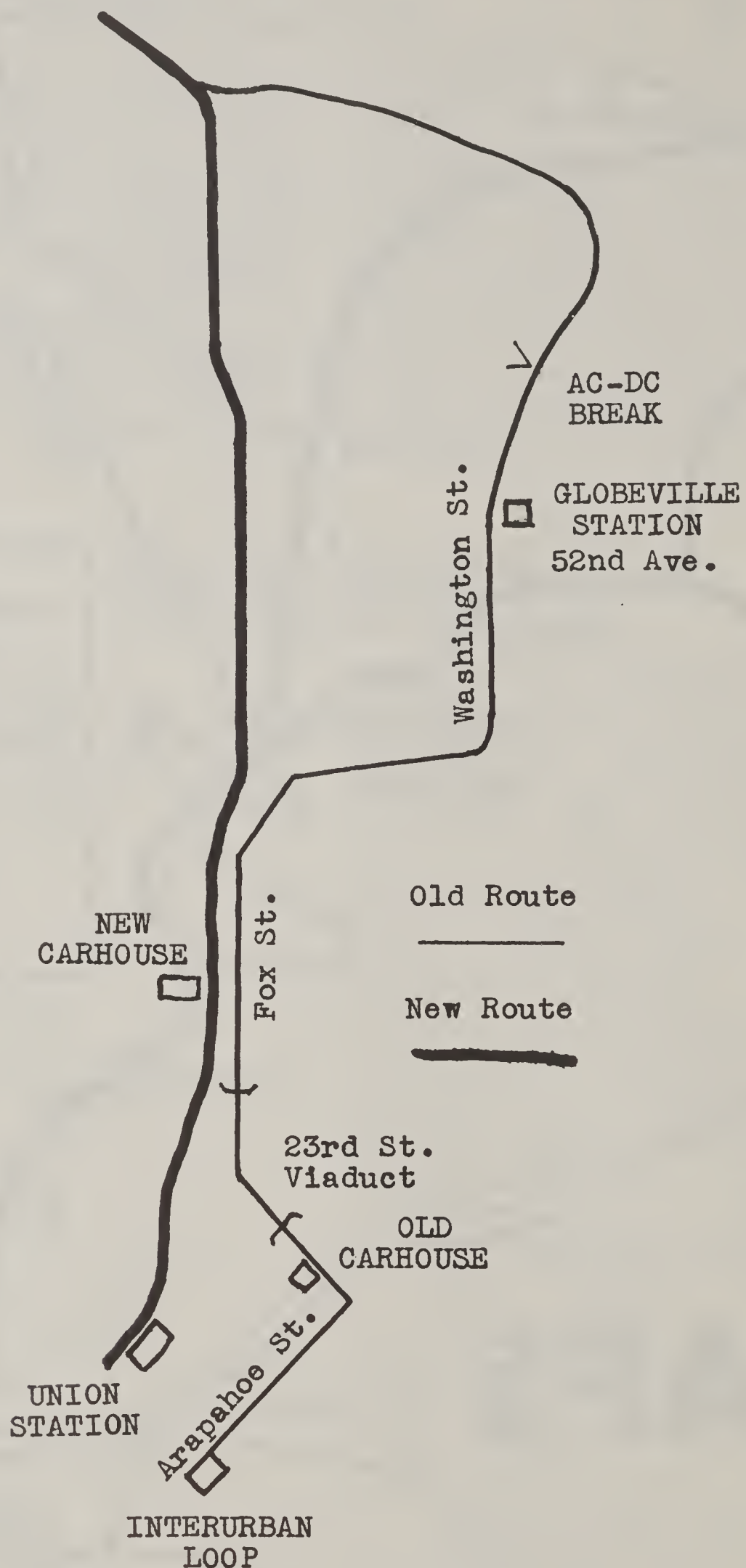
Length: Motors 55'6"
Trailers 55'6"
Width: 10'0"
Height: 14'0" to Running Board
Weight: Motors 125,000
Trailers 66,250
Seats: Combos 46
Others 58
Body: Wood
Underframe: Steel
Trucks: Alco type A
Truck WB: 90" motors
66" trailers
Motors: 4 Westinghouse 148-A
Motor HP: 125
Wheel Diameter: 38"
Inside Width: 8'10 $\frac{1}{2}$ "
Inside Height: 9'2 $\frac{1}{2}$ "
Height, Rail to Sill: 3'9"
Length Baggage Comp: 8'0"
Length Forward Cab: 5'0"
Interior Trim: Mohogany
Brakes: Westinghouse AMM
Axles: 6 $\frac{1}{2}$ "
Bolsters: Cast Steel
Control: West. Electro-Pneu.
Couplers: Washburn
Curtains: Pantasote
Hand Brakes: Peacock
Heaters: Consolidated

Body Color: Pullman green
Exterior Trim: Gold
Pantagraph: Westinghouse air
Headlights: Crouse-Hinds AC-DC
Journals: 5 $\frac{1}{2}$ " x 10" Motors
5" x 9" Trailers
Pilot: Locomotive type
Registers: Ohmer
Roof: Sheet metal
Floor: Sheet steel
Sanders: Lintern
Seats: St. Louis Car Co.
Seat Material: Pantasote
Retrievers: Lord No. 4
Trolley Base: Nuttall
Wheels: Standard rolled steel
Car Weights:
Body, light: 46,000
Trucks without motors 13,900
Air & Electrical Ect. 15,000
Total, Motors 125,000
Total, Trailers 66,250
Builder: St. Louis Car Co.
Date Ordered: January 25, 1908
Date Delivered: June 1, 1908
Road Numbers:
Straight Motors: M-151-M-156
Combo Motors: M-157, M-158
Trailers: 201-204
(M-157 rebuilt to M-159, 1920)

ADDITIONAL TRUCK DATA: Motor trucks were Alco's standard Type A design of two-bar equalizer with swing bolsters, and were built to carry a maximum load of 38,000 pounds at center plate. Triple elliptic bolster springs were used. The trailer trucks were of the same design but lighter---carrying 25,000 pounds at center plate and weighing 11,400 pounds.



TO BOULDER



Route Denver City

Boulder City

To
Louisville

Pearl Street

□ D&I Station

Business District

□ C&S Station

D&I Substation

12th St.

Private R-O-W

Original Route

Route After 1918

U n i v e r s i t y
o f
C o l o r a d o

Interurban Park

To Marshall

BOULDER RINGS BELLS AS FIRST ELECTRIC DASHES INTO THE CITY

High Speed Takes Interurban Car From Denver to the College City on Exact Time.

[SPECIAL TO THE NEWS.]

BOULDER, Colo., June 23.—Amid the ringing of bells, the blowing of whistles and the cheers of the people of Boulder the first car over the Denver & Interurban ran into the university city this afternoon after making the run in an hour and eight minutes, strictly on schedule time.

The car carried as its passengers Governor Buchtel, Mayor Speer and other prominent officials of Denver and Boulder, with officials of the railway and many engineers. The car is finished on the inside with mahogany, the ceiling is

Denver "News" ---
June 24, 1908.



THE FIRST CAR ON THE NEW BOULDER ELECTRIC LINE AND GROUP OF OFFICIALS AND THEIR GUESTS, PHOTOGRAPHED AT THE START OF THE TRIP.

Painted green, and the seats upholstered with black leather. Sixty can be accommodated.

Regular service will be commenced tomorrow. Two cars will be placed on the run tomorrow and two more by the end of the week. Four other cars are in the barn and will be put on as soon as the transformer is installed in Boulder. The cars weigh 117,400 pounds each and cost \$20,000 apiece. By way of Marshall the service will be one hour and eight minutes; by way of Louisville one hour and fifteen minutes.

The cars will alternate between the two lines, going one way and returning the other. The single rate will be 70 cents, the round trip \$1.20, with numerous special \$1 rates. Commutation service will be as low as 1¼ cents a mile.

On the initial trip the car was in charge of Conductor F. L. Tomlinson and Motorman Lute Shoop and hardly a tremor was felt as the fast electric flew along mile after mile, making more than forty miles an hour on many occasions. Twenty minutes is allowed to the city

limits at Globeville and the cars stop at the station en route whenever flagged.

The track is slag ballasted to a depth of twelve inches and the party was carried to the University of Colorado by electricity, and from there into town by steam, as the electric power will not be on in Boulder until the transformer is placed in position.

The Eldorado Springs line will be opened in a week; until then the stub steam train will make connection at Marshall.

II - OPERATION

Featuring The Whiteford Photos

D&I normally operated 18 round trips per day, 9 going around the loop counter-clockwise by way of Louisville, and 9 going the opposite way via Superior. The original schedule called for cars to make the trip between terminals in one hour flat:

Denver-Globeville (3.18)	18 minutes
Globeville-Boulder (27)	38 minutes
Boulder city (1.56)	4 minutes

Figures in parentheses indicate mileage.

There were 27 possible stops on the main line between Globeville and Boulder and, in the early days of operation, many trains had to make every stop. From this it can be seen that very high acceleration and deceleration was required, as well as high speed between stops, to effect this schedule. The schedule proved too severe, however, and the running time was increased by 15 minutes in one direction and 10 minutes in the other which revised schedule held until the end of operation in 1926.

As has already been pointed out, D&I cars originally operated over city streets to and from their terminals in both Denver and Boulder. As traffic increased with the years, it was considered advisable to abandon city street operation in favor of 100% private right-of-way operation to the railroad stations in the two cities. Furthermore, such a shift would eliminate the need to run on DC current, simplifying maintenance. The Boulder terminal was the first to be shifted, the change being effected in 1918. The D&I had its original station in Boulder in the rear end of a bank building on Broadway (12th St.) near Pearl St. As the map shows, to reach this site, the interurban cars had to traverse some of the city's busiest intersections.

Operation to the interurban loop at 16th and Arapahoe in downtown Denver continued until 1923, when D&I cars were shifted to the Denver Union Station. The main reason for the Denver shift was the reconstruction of the 23rd St. Viaduct, over which D&I cars

had to pass. As the map shows, D&I cars left the loop, ran along Arapahoe to 23rd, turned north on 23rd (three blocks along which street was situated the original barn), crossed the railroads and the Platt River on the old wood viaduct, came down onto Fox St., veered right at 44th St. to Washington, finally reaching the Globeville station at 52nd St. From here the cars made a wide sweeping curve to the left, continuing on in a northerly direction until the tracks reached parallel operation with the C&S. When D&I shifted to the Union Station, both its barn and Globeville station were abandoned; a new carhouse was erected on the new route at 3625 Fox St. and D&I cars ran all the way from this time on via C&S trackage.

A glance at the financial statement of the D&I after its Denver operation was removed from city streets indicates all too clearly the adverse effect of the shift. From a multiplicity of points where passengers might board the cars, the D&I changed to but one point---and that point (Union Station) not located too close to the center of the city. Too, removing the big green interurbans from city streets eliminated their advertising value; the sight of one of them moving impressively down Arapahoe must have influenced many to make the ride to Boulder who would not otherwise have given the matter a moment's thought. Although the increasing use of the private automobile was being felt by all interurbans in 1923, there is some room for us to doubt the wisdom of the D&I (perhaps it was a C&S decision?) not to bear its share of the cost of the new 23rd St. Viaduct so its cars could continue to use the downtown loop.

Throughout its lifetime, D&I operated its trains normally as one motor car or one motor and one trailer. The maximum size train, however, consisted of three motors and three trailers coupled, all arranged for multiple unit operation.

EMPLOYEE RELATIONS: A crew in mainline service on the D&I consisted of conductor, motoneer (motorman to us), and one brakeman. Crews on the Eldorado Springs branch consisted of conductor and motoneer, and in addition to their shuttle runs back and forth from Marshall they were required to handle baggage and freight without increased compensation.

To give an idea of wages, the schedule in effect March 6th, 1919, called for wages of 67¢ per hour for conductors and motoneers, while brakemen received 50¢ per hour. Eight hours or less constituted a day's work. Work in excess of eight hours was paid for as overtime or mileage, whichever was greater, but not both. All mileage made in excess of 5,000 miles per month was paid for at rates of 3.2¢ per mile for motoneers and conductors and 2.4¢ per mile for brakemen, but such excess mileage was not paid for in both mileage and overtime rates but whichever rate gave the higher compensation was paid. Mileage allowances were as follows: between D&I car barn and Globeville 3.2 miles. 6.4 miles between same points for round trip. Between Globeville and Boulder, in either direction, 28.5 miles; round trip 57 miles. Between Marshall and Eldorado Springs 3.3 miles.

All new runs and permanent vacancies for motoneers and trainmen on the D&I were bulletined on the D&I and also on the Ft. Collins District of the C&S for five days, and were given: first, to the men holding rights on the D&I in order of their seniority with the D&I; next, to employees in train and engine service on the Ft. Collins District of the C&S, in order of their rights and seniority on the Ft. Collins district.

Employees who returned to the service of the C&S, due to reduction of force, held their seniority on the D&I and when needed, were returned to the D&I without change in the order of their D&I seniority.



Turn back the calendar to 1914 and behold a typical D&I special train at Eldorado Springs. M-152, a trailer and another motor comprise our train in this rare photo. Note roof headlight. The El Dorado spur was about three miles long and operated

only during the summer excursion season. On the heaviest holidays and Sundays, from 4000 to 5000 excursionists were handled.



A D&I excursion train ties up at Boulder Junction prior to its run to Eldorado Springs back in 1919. M-151 is on the head, followed by a trailer, a motor combo, another trailer, and a C&S coach bringing up the rear.



A meet at Semper in 1912: Trailer 204 and motor M-153 are at left; other train is headed by M-155.

Five car train at Boulder Station of the C&S about 1919. D&I abandoned its original route through Boulder in 1918 because of traffic and power conditions, operating from then until final abandonment over C&S trackage through Boulder.



M-158 at original barn in Denver at 23rd & Market. Photo was taken after car had arrived at 8:30 AM on May 24th, 1909, after its fast run from Boulder in which it encountered the heaviest snow of the year.



IT TOOK THREE HUSKY MOTOR CARS TO BUCK WINTER
SNOWDRIFTS ON THE HIGH PLATEAU BETWEEN DENVER
AND BOULDER. IN THESE MAGNIFICENT PHOTOS, WE
SEE THE MOTORS AT MADISON, COLORADO, IN 1913.





ABOVE: M-158 TAKEN AT C&S CROSSING, BOULDER, DECEMBER 15, 1914. IN THE PHOTO IS THE CREW: BILLY DELANEY AND WALTER BICKNELL.

LEFT: M-157 POSES FOR A HEAD-ON SHOT IN 1912 AT SEMPER. NOTE THE NARROW-GAUGE C&S STEAM LOCOMOTIVE ALONGSIDE.

BELOW: ONE OF THE MOST BEAUTIFUL RIGHT-OF-WAY SCENES EVER TAKEN OF AN INTERURBAN. PHOTO WAS TAKEN NEAR BOULDER JCT. IN 1911.



THE GLOBEVILLE DISASTER

Safety was the watchword on the D&I. In all its years of operation the big green cars had a perfect safety record except for one major accident---that which occurred on Labor Day, 1920. Newspaper readers all over the west picked up their papers the following morning to be greeted by these headlines:

"Ten Killed As Denver Cars Crash; Interurban Flyers Running At High Speed Hit In Headon Smash."

The fatal crash occurred on the afternoon of September 6, 1920, just outside Globeville. The final holiday of the summer saw large crowds making the trip to Eldorado Springs, and the D&I was running many extra trains to that resort. A tramway strike on the Denver city system, plus the fact that daylight saving time governed operation of D&I trains inside the Denver city limits while standard time governed them beyond Globeville, further added to the general state of confusion which prevailed that day.

The excursion train involved in the Labor Day tragedy was composed of M-157 and a trailer. The single car they hit on a curve just outside Globeville was the regular train from Boulder, M-151, running at high speed to get back on its schedule. When the two cars hit they plowed into each other for a distance of 15 feet. Few persons on either train escaped injury, 101 being injured in addition to the ten killed instantly and the two more who died the following day. At least two persons were killed when they jumped in an attempt to save themselves; one of these was Conductor C. W. Grenamyer, 60 years old, in charge of the inbound car. As soon as word of the wreck was received in Denver, a squad of soldiers there in connection with the tramway strike was rushed to the scene.

The investigation which followed blamed Conductor J. W. Schultz and Motorman Lawrence Cripps of the El Dorado special train for the wreck. C. W. Richards, agent of the D&I at Globeville, stated flatly that "the crew of the special northbound train is to blame for the head-on collision." Schultz declared that he received orders at Globeville to proceed, but Richards denied this, adding that the special train should have waited at Globeville for the inbound car to pass.

The two telescoped cars were rebuilt and operated until final abandonment. M-157 in the rebuilding was changed to a straight double-end passenger motor and renumbered M-159.

The Labor Day tragedy struck deep into the sensibilities of D&I officials and employees. For instance, Andrew Whiteford felt it so keenly that the subject was never mentioned in his presence. The D&I, of course, found itself faced with numerous damage suits, and when the last claim was paid off, the interurban company's financial position was seriously impaired.

INTERURBANS publishes the above version of the investigation and its findings in good faith, taking same verbatim from the accounts published in the Los Angeles "Times" of that period, released under an Associated Press credit-line.

In an effort to be fair to all, we next publish Mr. Edmunds' account of the facts leading up to the disaster; Mr. Edmunds' account is contained in a letter to the publisher of INTERURBANS and bears the date of September 29, 1947:

"As stated previously, our cars were operated from the city limits of Denver to the Interurban Loop and back by Denver Tramway crews as long as we operated over Tramway tracks. On the date of the wreck in question the tramway crews turned over this equipment to the D&I crew (an extra crew recruited from C&S forces for the day) at 12:18 PM City Time, which was 11:18 AM by railroad time. No D&I train was due in at 12:19 PM railroad time but there was one due in at 11:18 AM and the crew figured they had nothing to clear at this point as they had the city time then in mind. From all evidences available this set of circumstances was undoubtedly the cause of the accident."

Interurbans

C&S employees who desired to familiarize themselves with electric operation were given an opportunity to do so after getting permission from the proper officer of the C&S under arrangements established by proper officers of the D&I.

After continuous service of 16 hours, D&I employees were required to take 10 hours off duty before resuming service, except in cases of washouts, wrecks or other emergencies.

Steam trains were apt to be run temporarily on any or all parts of the D&I under C&S rates of pay and by C&S Ft. Collins District men.

These interesting arrangements regarding interchange of men between the D&I and the C&S were established to prevent reoccurrence of labor troubles that took place in 1916, when C&S men attempted to have all D&I men ousted and their jobs awarded to them. When D&I first opened, steam men did not give the new electric line much of a chance to survive; After its success was assured, they looked upon the easier work of the D&I men with a great deal of envy. Inasmuch as most D&I employees came originally from the Cripple Creek electric line, the C&S men felt that their seniority on the Ft. Collins District gave them an ethical right to the better jobs the D&I afforded. Feeling ran high for a time, with even the newspapers taking part; eventually the D&I men were vindicated, with provisions being made for steam men to switch to D&I service as above indicated.

SPECIAL RULES: The D&I Book of Rules was that of the Colorado & Southern; D&I men had to be absolutely familiar with the C&S Book of Rules for it applied to all service on the D&I Railroad.

Maximum speed on tangents was 50 miles per hour; on curves, 40.

Standard clocks were located in the Denver carhouse and at Boulder Station.

Registers were located at Denver, Coalton, Ara, Boulder; also at Marshall and Eldorado Springs for Eldorado Springs branch trains.

Derailed were located at Union Station and on the back track at Eldorado Springs.

The wye was located at Denver carhouse.

Red flags and red lanterns had to have at least two torpedoes and two fusees attached at all times.

Conductors of work extras and foremen of bridge and track gangs had to furnish their flagmen with written instructions to be given to motoneer of train flagged, detailing clearly what he was to do.

Whenever a motor car had to be set out on a siding, it had to have its pantagraph lowered, windows closed, and all doors locked.

Inasmuch as D&I cars had metal roofs, it was widely heralded that to go on the roof while car was standing under a trolley wire was especially dangerous.

Trains had to come to a complete stop before crossing these railroad crossings: Burlington (MP 0.45), C&S (MP 0.55), Burlington (0.71), C&S (1.56), DL&N (3.53). At Burns Junction, D&I trains were ordered to approach the crossing with the Burlington under full control expecting to find crossing occupied.

Employees were cautioned against impaired clearances due to coal and ore chutes, viaducts, bridges, stock yards, telegraph poles, mail cranes, switch stands, projecting rock in cuts, overhead and guy wires, skidways, cribbing around mine property, mine buildings, shaft houses, trolley wires and poles; also, tracks at terminal stations were so close together that it was dangerous for a man to ride on the side of a D&I car.

LOCAL COLOR: No reports concerning life on the D&I could be complete without certain colorful instances that seem to crop up wherever trolley wire ran and the populace grew to depend on the speedy cars.

For instance---The D&I ran through a well developed mining district, and miners have never been noted for their sophistication. During one particularly bitter strike of the miners, passengers in a D&I car passing thru Louisville one afternoon were somewhat taken back when bullets began winging their way through windows and woodwork. In no time at all passengers were hugging the floor, while the big green car rapidly got out of range of the warring miners.

Before the day of the automobiles, D&I hauled athletic teams and their rooters between Denver and Boulder. Never were the big green cars livelier than when in such service. Once a victorious team swiped a lady's goat in Denver, loaded it aboard a D&I car and took it to Boulder. When that

car returned to Denver without the goat, an irate biddy collared the motorman (who was A. W. Whiteford) and loudly demanded the immediate return of her animal. Needless to relate, the only goat she got that day was Whiteford's.

Towns along the route of the D&I were slow putting up their own schools, so for many years school trains operated; it would be interesting to check up today and see how many grown men and women of that district owe their education to the fact that the D&I provided them dependable transportation to and from school.

Snow was always a problem. The big snow of December 1913 deposited three feet of the white stuff on level ground. The D&I was tied up tight and its crews had to walk to their homes from wherever their car happened to stall. Andrew Whiteford made himself a pair of snowshoes from apple boxes, swung down off his car at Globeville, and headed for home, 18 miles away; he walked from 5 AM to 4 PM before he made it.

D&I held picnics for its employees at Eldorado Springs and ran special trains for them. The Springs was not an amusement resort such as is common today; it had a swimming pool, hotel, dance hall, and hot springs---but no amusement devices. Thru operation to the Springs via D&I operated only on Sundays, holidays or special excursions with shuttle service being provided by a solitary car crewed by Motoneer Humlong and Conductor Rufus Jones who made nine 20-minute round trips daily over the 3 miles that separated the Springs from Marshall.

Church's Lake, near Broomfield, attracted a good number of hunters and fishermen each season; most of them traveled via D&I cars in the early days, and crews usually had a little something extra to take home to the wife to be cooked for supper.

MISCELLANEOUS CHANGES: As the years went by, certain changes took place in D&I cars and trackage, some of which have been mentioned (such as change in route through Denver and Boulder). Others follow:

CARS: Originally all D&I motor cars were single end. These operated around the Interurban Loop in Denver, around the Louisville Junction-Boulder loop through Boulder, and turned on a loop at Eldorado Springs during summer operation to that point. In 1922 and 1923 when operation was shifted to the Denver Union Station, all of the cars were then arranged for double end operation.

Originally all cars had their multiple unit receptacles located beneath the drawbars which necessitated men getting down very low between cars to make the necessary couplings. All cars were later put through the shops and the receptacles relocated on the front panels making it much easier to couple up trains.

The motors on D&I cars were originally rated at 125 horsepower each with natural ventilation; due to the severity of service Mr. Edmunds had these changed for high speed forced ventilation which gave them a rating of 160 horsepower.

Regarding Fort Collins cars, the original cars installed there by the D&I were small double end streetcars which were sold to an Oklahoma concern after the city took over the Fort Collins operation in 1918; the Birneys were purchased by the city after it began operation of the system.

The original plans were to have trailers constructed somewhat shorter than the motor cars. At the time of construction, however, they were built so that they were within a few inches of being the same length.

ROUTE: D&I Junction was a casualty of the passing years. Originally D&I cars made connection with C&S tracks for operation around the loop at Louisville Junction (now Coalton) and at Webb. The idea of this arrangement was to keep D&I traffic off C&S tracks as long as possible. This required the services of three operators at Webb and three operators at Louisville Junction. The C&S track between Louisville Junction and Webb was later electrified and the old D&I trackage between D&I Junction and Webb was abandoned and removed. By this change the three operators at Webb were dispensed with.



III - ABANDONMENT



The early years of the D&I were profitable years---just as they were with so many other interurbans. Little by little, however, the Denver-Boulder countryside was gridironed by hard-surface roads, each of which carried a growing number of automobiles and trucks. This diversion of traffic was not felt in a major way until the 1920s, but the World War and its economic ramifications resulted in putting the D&I into its first receivership.

The first receivership was brought about at the behest of the Guaranty Trust Company of New York City, trustee, representing the bondholders. Mr. Edmunds was appointed the receiver and his careful management resulted in the successful discharge of the receivership a short time later. The major casualty of this first receivership was the loss of the city system in Fort Collins which Edmunds sold to the city of Fort Collins in 1918.

For two or three years, D&I operated at a profit. The outlook for the future might have seemed satisfactory had it not been for the Globeville collision and its attendant claims.

When the end finally came for the D&I, it came suddenly and with complete finality. The profitable years of 1921 and 1922 were followed by years of increasingly severe losses. Figures for the five years immediately preceding the abandonment year, 1926, follow:

1921.....	\$ 6,782	(operating profit)
1922.....	27,095	"
1923.....	13,051	(loss)
1924.....	42,226	"
1925.....	53,514	"

The year 1926 showed a loss to August 1st of \$51,217.

With these disastrous years, the road was of course unable to keep up its interest payments on its first mortgage 6% gold bonds

and this brought back into the picture the Guaranty Trust Company, trustee for the bondholders. Guaranty again applied for an order putting the D&I into the hands of a receiver, and as the result of this suit in equity, the Kite Route was placed in the hands of the receiver on September 2nd, 1926. Federal Judge Robert E. Lewis named William H. Edmunds, D&I general manager since its opening, receiver. Mr. Edmunds gave as his opinion that it would be desirable to discontinue interurban operation. A short time later the C&S officially asked for permission to abandon its electric interurban subsidiary in favor of its motor coach subsidiary, Denver & Interurban Motor Co. which it had established on a parallel route between Denver and Boulder in 1925.

According to C&S officials' testimony at the abandonment hearings, the Denver & Interurban Motor Co. was organized in self-defense. The bus company and the interurban, both owned by the Colorado & Southern, were competitive and did not share profits. In view of the interurban's poor financial showing, the C&S desired to discard it, putting all the Denver-Boulder traffic into busses; citizens along the route actively opposed the plan.

On December 10, 1926, Judge J. Foster Symes in the federal district court at Denver instructed Mr. Edmunds to cease operation of the D&I. In passing upon the contract between the electric line and the city of Boulder, Judge Symes said that the contract did not bind the railroad to operate at a loss. Attorneys for the city of Boulder told the court that it had unlimited power to issue receiver's certificates and should do so to keep the road in operation. The court answered that it did not so understand the law and that there was no visible means of the road improving its earning power. The contract

mentioned was one entered into by the D&I and the city of Boulder and which expired in June 1927; it was in the nature of a guarantee of service. Several of the other cities on the line, anxious to keep their interurban cars, also requested permission to intervene and oppose the abandonment plea, but Judge Symes ruled that none of them besides Boulder had any contract guaranteeing service.

On December 15, 1926, operation of the big green interurban cars was suspended for all time. The Denver & Interurban Motor Co. took over all service, including the summer operation to Eldorado Springs. Officials of the interurban carried on their jobs overseeing motor coach operation---and to their credit it should be recorded that they did as well as anyone could with the inferior type of vehicles they were forced to use. One by one the big electric cars were disposed of; two trailers were sold to the contracting firm of Hamilton & Gleason, the motors were burned, and the records do not indicate final disposition of the other trailers.

Today the visitor to the Denver area seeking traces of the D&I has little to go by. True, steam trains still operate to Boulder via Louisville, but the route via Marshall has been abandoned. The D&I Motor Co. was absorbed by Burlington Trailways in 1941, and recently has become a tiny part of the new American Buslines combine. The interurban loop in downtown Denver, around which the big D&I trains operated until 1923, is very much in operation today, accommodating cars of the Denver & Intermountain Railroad which still roll to Golden, Leyden, and Arvada. The D&I's new car barn at 3625 Fox St. is also much in evidence. However, the few remaining shadows of the once-thriving D&I Railroad are too forlorn, too lonesome, to inspire the chance observer to recreate in his own mind the busy scenes of yesteryear. The Denver & Interurban Railroad has receded into that bourne peopled by the greats of Denver's romantic yesterdays: such figures as Tammen and Bonfils, Silver Dollar Tabor and her legendary father, "Haw." There may it rest in peace, a respected member of the family of builders of the Mile-High City.



OFF THE TRACK WAS M-158 AT ANSTEE'S SIDING IN 1916---AND OFF THE TRACK WAS D&I IN ITS ENTIRETY TEN YEARS LATER.



INTERURBANS

1414 S. WESTMORELAND AVE., LOS ANGELES 6, CALIFORNIA

The National Electric Railway News Digest

Special No. 5 --- The Denver & Interurban Railroad

Special No. 3

Pacific Electric All-Time Roster

(\$1.00)

Special No. 4

The Bamberger Railroad

(50c)

ORDER YOURS NOW!

JEALOUS RAILROAD EMPLOYEES WOULD REMOVE D. & I. CREW

Canine Feb. 15-16.
Petitions signed by the engineers, firemen, conductors, brakemen and other employees of the Colorado & Southern railroad, have been filed with the officers of the nearly every employee of the Denver and Interurban. Most of the conductors, motor men and flagmen of the Interurban were never in the C. & S. service, but were called into operation from the Cripple Creek line at the time the electric was put into operation. C. & S. employees offered the positions, but refused as they had doubts as to the success of the interurban.

The petitioners would have the positions on the interurban system put on the same basis as those on the Colorado and Southern, where the senior men in service would secure the best positions. This system would oust Conductors Whittford, Tomlinson, Grendmyer, Spencer and Motorman Delaney, as they were Snook of the Interurban as they were employees of the C. & S. railroad. In case the petition is adopted the interurban officials would be required to call for bids every time a change was made in the D. & I. schedule and when vacancies occurred.

The men named have many friends in Boulder and along the line between this city and Denver who would regret to see the petition granted.

—Last Timetable

NORTHWARD

FIRST CLASS

																TIME TABLE NO. 7			
																Stations	Distance Denver	Distance between Sta	Distance Coalton
327	325	323	321	319	317	315	313	311	309	307	305	303	301						
Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily						
11.45PM	9.25PM	8.00PM	6.00PM	5.00PM	4.00PM	3.00PM	2.00PM	12.01PM	11.00AM	9.00AM	8.00AM	6.20AM		P	0.	0.	DENVER	16.76	
															0.46	0.45	C. S. & Q. CROSSING	16.31	
															0.55	0.10	C. & S. CROSSOVER	16.21	
															0.71	0.16	C. S. & Q. CROSSING	16.05	
11.51	9.31	8.06	6.06	5.06	4.06	3.06	2.06	12.06	11.06	9.06	8.06	6.26		P	1.11	0.40	CAR HOUSE	15.65	
															1.56	0.45	C. & S. CROSSING	15.20	
11.57	9.37	8.12	6.12	5.12	4.12	3.12	2.12	12.12	11.12	9.12	8.12	6.32		P	3.53	1.97	UTAH JCT D. L. & N. CROSSING	13.23	
12.03	9.43	8.19	6.19	5.19	4.19	3.19	2.19	12.19	11.19	9.19	8.19	6.38		P	6.52	2.99	WESTMINSTER	10.24	
															7.62	1.10	COLLEGE HILL	9.14	
12.06	9.46	8.22	6.22	5.22	4.22	3.22	2.22	12.22	11.22	9.22	8.22	6.41		P	7.83	0.21	ANSTEE	8.93	
12.09	9.49	8.26	6.26	5.26	4.26	3.26	2.26	12.26	11.26	9.26	8.26	6.44		P	9.53	1.70	BEMPER	7.23	
															10.24	0.71	BARZOI	6.52	
12.14	9.54	8.31	6.31	5.31	4.31	3.31	2.31	12.31	11.31	9.31	8.31	6.48			11.43	1.24	STANDLEY LAKE	5.28	
12.15	9.55	8.32	6.32	5.32	4.32	3.32	2.32	12.32	11.32	9.32	8.32	6.49			12.14	0.66	MANDALAY	4.62	
															13.07	0.93	LORA NE	3.69	
12.19	9.59	8.36	6.36	5.36	4.36	3.36	2.36	12.36	11.36	9.36	8.36	6.53		P	14.16	1.09	BROOMFIELD	2.60	
12.20	10.00	8.37	6.37	5.37	4.37	3.37	2.37	12.37	11.37	9.37	8.37	6.54			14.83	0.67	BURNS JCT. (C. B. & Q. Crossover)	1.93	
12.23	10.04	8.41	6.41	5.41	4.41	3.41	2.41	12.41	11.41	9.41	8.41	6.57		P	16.46	1.63	D & I JCT	0.30	
12.24PM	10.05PM	8.42PM	6.42PM	5.42PM	4.42PM	3.42PM	2.42PM	12.42PM	11.42AM	9.42AM	8.42AM	6.58AM		P	16.76	0.30	COALTON	0	

VIA COLORADO & SOUTHERN FROM COALTON TO ARA, VIA LOUISVILLE; AND FROM PEARL

[illegible]

ELDORADO SPRINGS BRANCH

																Sidings	Distance from Marshall.	Distance between Stations.	STATIONS	Distance from Eldorado Springs.	
							367	365	363	361	359	357	355	353	351						
							Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily						
							L 10.22	L 7.43 PM	L 6.01 PM	L 4.43 PM	L 3.01 PM	L 1.43 PM	L 12.02 PM	L 10.01 AM	L 9.07 AM		P	.0	.0 MARSHALL	3.03
							A 10.32	A 7.53 PM	A 6.11 PM	A 4.53 PM	A 3.11 PM	A 1.53 PM	A 12.12 PM	A 10.11 AM	A 9.17 AM		P	2.67	2.67 PRUDEN'S BRANCH	0.36
							Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		P	3.03	0.36 ELDORADO SPRINGS0

Trains Northward are superior to treins of the same cless Southward.

Trains between Coalton and Pearl St. Boulder via Marshall, and between Coalton and Ara via Louisville will be governed by C. & S. Time Table and Rules.

Connecting switch with C. & S. at Pearl Street, Boulder, must be kept set and locked for C. & S. All D. & I. electric trains via Louisville will enter and leave Coalton through new connection.

All trains will stop on flag at Fox Street M. P. 1.83; Burlington shops M. P. 2.75; Utah Jct. M. P. 3.56; Modern Crossing M. P. 4.13. Federal Blvd. M. P. 5.61, and Sheridan Blvd. M. P. 8.43. Cross-over to C. & S. Ry. at M. P. 0. at M. P. 0.55 at M. P. 4.02 at M. P. 8.01 and at M. P. 14.83.

Electric Sidings and capacity in cars.
Denver, 4; Car House, 21; Utah Jct., 6; Westminster, 4; Anstees, 4;
Semper, 4; Broomfield, 4; D. & I. Jct., 3; Coalton, 11.

D. & I. trains will proceed with caution between C. & S. crossing M. P. 1.56 at Prospect and C. B. & Q. Crossing M. P. 0.45, looking out for C. B. & Q. yard engines occupying main track.

D. & I. trains will approach the near side of 20th street Viaduct at not to exceed 2 M. P. H. and be prepared to stop immediately.

SOUTHWARD																EFFECTIVE MAY 31, 1925														
Office Closed.	FIRST CLASS																													
	300	302	304	306	308	310	312	314	316	318	320	322	324	326																
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily																
	A	7.37 AM	A	6.37 AM	A	10.37 AM	A	11.37 AM	A	1.37 PM	A	2.37 PM	A	4.37 PM	A	5.37 PM	A	6.37 PM	A	7.37 PM	A	6.37 PM	A	10.43 PM	A	11.45 PM				
No Office		7.31		8.31		10.31		11.31		1.31		2.31		4.31		5.31		6.31		7.31		8.31		10.37		11.40				
No Office		7.25		8.25		10.25		11.25		1.25		2.25		4.25		5.25		6.25		7.25		8.25		10.32		11.35				
6.15 pm to 8.00 am	f	7.19	f	8.19	f	10.19	f	11.19	f	1.19	f	2.19	f	4.19	f	5.19	f	6.19	f	7.19	f	8.19	f	10.26	f	11.29				
No Office	f		f		f		f		f		f		f		f		f		f		f		f		f					
No Office		7.16		8.16		10.16		11.16		1.16		2.16		4.16		5.16		6.16		7.16		8.16		10.23		11.26				
	f	7.13	f	8.13	f	10.13	f	11.13	f	1.13	f	2.13	f	4.13	f	5.13	f	6.13	f	7.13	f	8.13	f	10.20	f	11.23				
No Office	f		f		f		f		f		f		f		f		f		f		f		f		f					
No Office		7.08		8.08		10.08		11.08		1.08		2.08		4.08		5.08		6.08		7.08		8.08		10.15		11.16				
No Office		7.07		8.07		10.07		11.07		1.07		2.07		4.07		5.07		6.07		7.07		8.07		10.14		11.17				
No Office																														
No Office		7.03		8.03		10.03		11.03		1.03		2.03		4.03		5.03		6.03		7.03		8.03		10.10		11.18				
8.00 pm to 8.00 am	f	7.02	f	8.02	f	10.02	f	11.02	f	1.02	f	2.02	f	4.02	f	5.02	f	6.02	f	7.02	f	8.02	f	10.09	f	11.12				
No Office		6.59		7.59		9.58		10.59		12.59		1.58		3.59		4.58		5.58		6.59		7.58		10.06		11.09				
	L	6.58 AM	L	7.58 AM	L	9.57 AM	L	10.59 AM	L	12.58 PM	L	1.57 PM	L	3.58 PM	L	4.57 PM	L	5.57 PM	L	6.58 PM	L	7.57 PM	L	10.05 PM	L	11.08 PM				

STREET, BOULDER, TO COALTON, VIA MARSHALL

[illegible]

350 is superior to No. 351 Eldorado Springs to Marshall

No. 358 is superior to No. 359 Eldorado Springs to Marshall

350 is superior to No. 331 Eldorado Springs to Marshman
352 " " " " 353 " " " "

No. 355	is	superior	No. 355	Endicott Springs	is	Marble
" 360	"	"	" 361	"	"	"
" 362	"	"	" 362	"	"	"

354	"	"	"	"	355	"	"	"	"
-----	---	---	---	---	-----	---	---	---	---

44	362	44	44	44	44	363	44	44	44	44
44	364	44	44	44	44	365	44	44	44	44

356	"	"	"	"	357	"	"	"	"
-----	---	---	---	---	-----	---	---	---	---

364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----